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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/840,092	05/06/2004	Gregory Richard Hanson	UBAT1560	7841

38396 7590 03/23/2007

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EXAMINER	
TRIEU, VAN THANH	
ART UNIT	PAPER NUMBER
2612	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/840,092	HANSON ET AL.	
	Examiner	Art Unit	
	Van T. Trieu	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-149* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-149* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/7/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4, 6, 7, 9, 11, 12, 23, 32, 34, 49, 62, 78, 80, 81, 83, 85, 86, 97, 106, 108, 115, 124, 138 and 140 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matters, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. For example, how the RF tag can be switched to a transceiver mode that permits tag to tag communication ?; or when an alarm state is activated ?; or when the RF tag does not receive a response from the RF reader ?. The RF tag cannot select the type of power current sources because it could not contain all types of power sources listed in the claim. The re-transmitted all data from the reader to the site server includes rejecting noise at a frequency selected from the group consisting of approximately 50 Hz and approximately 60Hz and substantially all harmonics thereof and diversifying is not described in the specification.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 69-73 and 145-149 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed "comprising the apparatus of claim 40 or 114" is unclear to what is the claimed limitations and whether it is an independent or dependent claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-4, 6-9, 11-23, 26, 27, 35, 36, 38-49, 52-57, 65, 68-73 are rejected under 35 U.S.C. 102(e) as being anticipated by **Bandy et al** [US 7,148,803]

Regarding claim 1, the claimed method comprising transmitting ID data, location data and environment state sensor data from a radio frequency tag (the RFID sensor tag 102 or 210 transmitting of ID, geographic location and biological, chemical, temperature and/or motion data to the readers 140, see Figs. 1 and 2, col. 1, lines 20-30, col. 2, lines 3-19, col. 5, lines 6-10, col. 6, lines 9-41 and col. 8, lines 41-53).

Regarding claim 2, the claimed depicting a location of the RF tag using a geographic information system (the geolocation processor 192, see Fig. 2, col. 6, lines 9-41 and col. 8, lines 41-53).

Regarding claim 3, the claimed RF tag adjusts with regard to the environment state sensor data a set point to lower power consumption (if a hazard is detected, sufficient power present at the RF tag sensor level to send a wake-up signal to the nearby RFID reader 140, see Fig. 2, col. 8, lines 41-47).

Regarding claim 4, the claimed RF tag can be switch to a transceiver mode that permits tag to tag communication (the RFID sensor tag 210 includes an antenna 206 is configured to switch off for sensing the environment and to switch on for the RF tag communicates with the reader 140, see Fig. 2, col. 8, lines 4-13).

Regarding claim 6, the claimed RF tag is switched to the transceiver mode when an alarm state is activated, which reads upon the wireless sensor reader 340 also includes an alarm for indicating when certain thresholds are reached or certain conditions are detected by an RF addressable sensor. Or the wireless sensor reader 1640 may also display a warning if any item in the cart contains the allergens such as trace peanut products, see Figs. 3 and 17, col. 23, lines 26-32.

Regarding claim 7, the claimed radio frequency tag includes a power source including an energy storage device that is recharged by at least one current source selected from the group consisting of a photovoltaic, a vibration transducer, an electrostatic charger, a radio frequency power rectifier, a thermo-electric generator and a radioisotope decay energy recovery device (the RFID sensor tag 102, 210 has a power generator 236 including battery or other power source such as power supply 293 of batteries or photovoltaic cell, see Figs. 2 and 2A, col. 8, lines 31-37 and col. 11, lines 30-60).

Regarding claim 8, the claimed receiving ID data, location data and environmental state sensor data from the RF tag at a reader (the RFID reader 140 receives all ID, location and sensor information data from each of the RFID sensor tag 102, 210, see Figs. 1 and 2, col. 1, lines 20-30, col. 2, lines 3-19, col. 5, lines 6-10, col. 6, lines 9-41 and col. 8, lines 41-53).

Regarding claim 9, all the claimed subject matters are stated in respect to claims 4 and 8 above.

Regarding claim 11, the claimed RF tag is switched to a tag to tag mode when the RF tag does not receive a response from the reader, which reads upon the RFID sensor tag 102, 110, 210 to be in sensing mode without response "off" from the RFD reader 140 and only become the RFID tag mode to communicate with the RFID reader 140 when it

detects of chemical, biological, allergen in food, or over the baseline reference 295, see Figs. 1 and 2, col. 5, lines 6-13, col. 8, lines 4-13 and col. 10, lines 19-32.

Regarding claim 12, all the claimed subject matters are stated in respect to claims 6 and 9 above.

Regarding claim 13, all the claimed subject matters are stated in respect to claims 2 and 8 above.

Regarding claim 14, all the claimed subject matters are stated in respect to claim 1 above, see Figs. 1 and 2.

Regarding claim 15, the claimed sensor characterizes at least one member selected from the group consisting of ionizing radiation, chemical moieties, biological species, acoustic emission, mechanical vibration and actinic radiation (the sensors 292a-292n and 810, see Figs. 2 and 8, col. 7, lines 32-52 and 57-59 and col. 17, lines 35-43).

Regarding claim 16, the claimed sensor characterizes at least one member selected from the group consisting of electromagnetic radiation, humidity, temperature, vibration, acceleration and mechanical interlock (the sensors 291a-291n, see Fig. 2, col. 7, lines 32-57).

Regarding claim 17, all the claimed subject matters are stated in respect to claims 3 and 16 above.

Regarding claim 18, all the claimed subject matters are stated in respect to claims 1 and 3 above, see Fig. 2.

Regarding claim 19, all the claimed subject matters are stated in respect to claims 15 and 18 above.

Regarding claim 20, all the claimed subject matters are stated in respect to claims 16 and 18 above.

Regarding claim 21, all the claimed subject matters are stated in respect to claims 3 and 18 above.

Regarding claim 22, the claimed sensor includes a power source that is not necessary for the tag to transmit ID data and location data (the sensor 294 includes power source 293, see Fig. 2, col. 8, lines 31-36).

Regarding claim 23, all the claimed subject matters are stated in respect to claims 7 and 22 above.

Regarding claim 26, the claimed receiving ID data, location and environmental state sensor data from the RFID tag at a reader and re-transmitting ID data, location and environmental state sensor data from the reader to a site server that provides data accumulation and analysis (the RFID reader 1440, 1640 re-transmits data information received from the sensor to the remote server 1490, 1690, see Figs. 14-16, col. 21, lines 60-67 and col. 23, lines 2-35).

Regarding claim 27, all the claimed subject matters are stated in respect to claims 2 and 26 above.

Regarding claim 35, the claimed receiving identification data, location data and environmental state sensor data from the reader at the site server and re-transmitting identification data, location data and environmental state sensor data from the site server to at least one server of a common database that provides analysis, comparison and tracking (the controller/server 1490, 1690 includes database for providing analysis, see Figs. 14-16, col. 21, lines 60-67 and col. 23, lines 2-35).

Regarding claim 36, all the claimed subject matters are stated in respect to claims 2 and 35 above.

Regarding claim 38, the claimed re-transmitting identification data, location data and environmental state sensor data from the site server to the common database can

include transmission by at least two alternatives selected from the group consisting of satellite, cell phone, acoustic, power line, telephone line, coaxial line, optical fiber and optical cable (the RFID reader 1440, 1640 re-transmits data information received from the sensor to the remote server 1490, 1690 via RF communications such as satellite, PDA, cellular phone, see Figs. 1, 10 and 14-16, col. 21, lines 60-67 and col. 23, lines 2-35).

Regarding claim 39, the claimed re-transmitting identification data, location data and environmental state sensor data from the site server to the common database includes transmission by internet (the RFID reader 140, 1440, 1640 re-transmits data information received from the sensor to the remote server 1490, 1690 via wireless communications network. The wireless sensor reader 140 can also communicate to the data communications network 175 via interface 185. Interface 185 is a wired interface. For example, when wireless sensor reader 140 is a computer having wireless capabilities, sensor reader 140 may access the Internet via interface 185 using TCP/IP. As can be appreciated by a person skilled in the relevant art(s), the communications protocol used between reader 140 and data communications network 175 can be any data communications protocol, see Figs. 1, 10 and 14-16, col. 5, lines 54-67, col. 6, lines 1-8, col. 21, lines 60-67 and col. 23, lines 2-35).

Regarding claim 40, the apparatus claimed limitations are met by the method claim 1 above.

Regarding claim 41, all the claimed subject matters are stated in respect to claims 7 and 40 above.

Regarding claim 42, all the claimed subject matters are stated in respect to claims 3 and 40 above.

Regarding claim 43, all the claimed subject matters are stated in respect to claims 15 and 42 above.

Regarding claim 44, all the claimed subject matters are stated in respect to claims 16 and 42 above.

Regarding claim 45, all the claimed subject matters are stated in respect to claims 18 and 40 above.

Regarding claim 46, all the claimed subject matters are stated in respect to claims 3 and 45 above.

Regarding claim 47, all the claimed subject matters are stated in respect to claims 16 and 45 above.

Regarding claim 48, all the claimed subject matters are stated in respect to claims 22 and 45 above.

Regarding claim 49, all the claimed subject matters are stated in respect to claims 7 and 48 above.

Regarding claim 52, the claimed RF tag is coupled to a shipping container (RFID sensor tag 1010 is coupled to the shipping package 1012 and container 1022 having, see Fig. 10, col. 18, lines 22-52).

Regarding claim 53, the claimed environmental state sensor data includes an environmental state inside the shipping container (the temperature, pressure, chemical, radiological, and/or biological RFID sensors 1010 in the shipping containers 1022, see Figs. 2 and 10, col. 18, lines 22-39).

Regarding claim 54, the claimed antenna coupled to the shipping container (the antennas 206n, see Figs. 1 and 10, col. 18, lines 22-67).

Regarding claim 55, the claimed shipping container includes a shipping container power supply and a RFID tag can tap into the shipping container power supply (the shipping container 1022 could be shipping box contains the RFID sensor tag 1010, which

includes its own power generator 236 and/or external power supply 293, see Figs. 2, 3 and 10, col. 8, lines 31-37, col. 11, lines 30-60 and col. 18, lines 22-67).

Regarding claim 56, the claimed shipping container includes one member selected from the group consisting of a dry box and a reefer (the shipping container 1022 can be a shipping box, see Fig. 10, col. 18, lines 22-39).

Regarding claim 57, all the claimed subject matters are stated in respect to claims 8 and 40 above.

Regarding claim 65, all the claimed subject matters are stated in respect to claims 35 and 57 above.

Regarding claim 68, all the claimed subject matters are stated in respect to claims 39 and 65 above.

Regarding claim 69-73, all the claimed subject matters are stated in respect to claims 1 and 40 above, see Figs. 1, 8 and 10-16.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** [US 7,148,803] in view of **Bradin** [US 6,566,997].

Regarding claim 5, **Bandy et al** fails to disclose the transceiver mode includes the RF tag transmitting during a randomized transmission interval and then receiving the buffering. However, **Bandy et al** teaches that the RFID sensor tag 102, 210 may include logic to activate the reader when certain conditions are sensed, on the occurrence of a pre-defined event, and/or at pre-defined intervals. As would be appreciated by persons skilled in the art, many RFID tag communications protocols can be used to activate the reader, see Fig. 2, col. 11, lines 54-60. **Bradin** suggests that the neighboring RFID systems 8, 10 comprising a first RFID reader 12 and a plurality of RFID tags, 16, 18, 20, 22, 24 and 26. To prevent signal collisions in the channel between the RF tags and the reader within a particular coverage region, the RF tags

each transmit their identification signals after a different quasi-random delay period. When the RF reader receives an identification signal from one of the RF tags, it transmits an acknowledgment signal to that RF tag informing it that its identity has been recorded. After receiving the acknowledgment signal, the identified RF tag does not retransmit its identification signal. If, after transmitting its identification signal and waiting for a predetermined time period, an RF tag does not receive an acknowledgment signal, it assumes that a collision has occurred in the channel and it retransmits its identification signal after another quasi-random delay period. This continues until an acknowledgment signal is received from the reader by each of the RF tags in the coverage region. After receiving identification information from all of the RF tags within its coverage region, the RF reader unit reports the collected information to an appropriate entity, see Figs. 1 and 2, col. 2, lines 39-53 and col. 3, lines 1-30. Therefore, an artisan would substitute the RF tag transmitting/retransmitting data information after a quasi-random delay period of **Bradin** for the RFID sensor tag of **Bandy et al** for preventing of collision or interferences, which cause of lost transmission and loosing data.

Regarding claim 10, all the claimed subject matters are discussed between **Bandy et al** and **Bradin** in respect to claims 5 and 9 above.

5. Claims 24, 25, 28, 29, 33, 50, 51, 58, 59 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** [US 7,148,803] in view of **Pulkkinen et al** [US 6,954,148].

Regarding claim 24, **Bandy et al** fails to disclose the sensor is coupled to the radio frequency tag wirelessly by at least one member selected from the group consisting of hybrid spread-spectrum, direct sequence spread-spectrum, frequency hopping, time hopping, time division multiplexing, orthogonal frequency division multiplexing and infrared. However, **Bandy et al** teaches that the external sensors 294 are coupled to the RFID tag 102, 110, 210 via RF sensor pad 208n, see Fig. 2, col. 6, lines 55-60. **Pulkkinen et al** suggests that the badges 16 and 18 are RF or combination RF/IR transceiver assemblies, which emit IR or IR and RF ID data signals, respectively, either automatically or when activated manually or upon detection of a trigger signal. In a further embodiment, a badge includes an IR scanning barcode or an RF transponder, which when interrogated respectively by an IR or RF source, such as another badge or one of the sensors 14, reflects ID data signals preferably toward the interrogating source, see Fig. 1, col. 5, lines 51-67 and col. 8, lines 3-10. Therefore, an artisan would substitute the wireless IR or RF transmission between the sensor and the RFID badge of **Pulkkinen et al** for the RF pad coupled between the sensor and RFID tag of **Bandy et al** for conveniently relaying of a plurality of environment conditions via multiple sensors/detectors without physical constrained by the RF pads and size of the RFID tag.

Regarding claim 25, the claimed identification data, location data and environmental state sensor data from the radio frequency tag is transmitted within a first frequency band and the sensor is coupled to the radio frequency tag wirelessly within a second frequency band that does not overlap the first frequency band, is met by the combination between **Bandy et al** and **Pulkkinen et al** in respect to claim 24 above, (the first protocol and second protocol transmissions, see col. 5, lines 19-44).

Regarding claim 28, all the claimed subject matters are discussed between **Bandy et al** and **Pulkkinen et al** in respect to claims 25 and 26 above.

Regarding claim 29, all the claimed subject matters are discussed between **Bandy et al** and **Pulkkinen et al** in respect to claims 24 and 26 above.

Regarding claim 33, all the claimed subject matters are discussed between **Bandy et al** and **Pulkkinen et al** in respect to claims 24 and 26 above.

Regarding claim 50, all the claimed subject matters are discussed between **Bandy et al** and **Pulkkinen et al** in respect to claims 24 and 45 above.

Regarding claim 51, all the claimed subject matters are discussed between **Bandy et al** and **Pulkkinen et al** in respect to claims 25 and 50 above.

Regarding claim 58, all the claimed subject matters are discussed between **Bandy et al** and **Pulkkinen et al** in respect to claims 25 and 57 above.

Regarding claim 59, all the claimed subject matters are discussed between **Bandy et al** and **Pulkkinen et al** in respect to claims 24 and 58 above.

Regarding claim 63, all the claimed subject matters are discussed between **Bandy et al** and **Pulkkinen et al** in respect to claims 33 and 57 above.

6. Claims 30, 32, 60 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** [US 7,148,803] in view of **Stlip** [US 7,057,512]. Regarding claim 30, **Bandy et al** fails to disclose the re-transmitting ID data, location and environmental state sensor data from the reader to the site server includes transmission on a reader power supply line. However, **Bandy et al** teaches that the RFID reader 1440, 1640 re-transmits data information received from the sensor to the controller such as a server 1490, 1690, see Figs. 14-16, col. 21, lines 60-67 and col. 23, lines 2-35. **Stlip** suggests that an RFID reader for use in a security system based upon RFID techniques. The RFID reader can use power line carrier communications to communicate with the controllers in the security system. The RFID reader of the security system can be provided with multiple modulation techniques, multiple antennas, and the capability to vary its power level and carrier frequency. The fifth innovation is the use of power line carrier communications between the RFID readers

and one or more controllers. While the RFID readers can also be hardwired to a controller, a significant installation cost advantage is obtained by allowing the RFID readers to "piggyback" on the standard AC power lines already in the building. Therefore, an artisan would substitute the power line communications between the RFID readers and one or more controllers of **Stlip** for the wireless communications between the RFID reader and controller/server of **Bandy et al** for significant installation cost advantage is obtained by allowing the RFID readers to "piggyback" on the standard AC power lines already in the building.

Regarding claim 32, **Bandy et al** fails to disclose the re-transmitting identification data, location data and environmental state sensor data from the reader to the site server includes rejecting noise at a frequency selected from the group consisting of approximately 50 Hz and approximately 60 Hz and substantially all harmonics thereof and diversifying. However, according to the combination of power line transmissions between the RFID reader and controller of **Bandy et al** and **Stlip** in respect to claim 30 above, and furthermore, **Stlip** suggests that the controller 300 and RFID reader 200 can communicate using hardwired communications. Therefore, using the present invention, an installation into a building that experiences frequent noisy power lines can install one gateway RFID reader 290 in hardwired communications with the controller, and the remaining RFID readers 200 can operate as a self-healing network and exchange messages by, between, and through each other to reach the gateway RFID reader 200 in hardwired communications with the controller. The interference to the present

invention can come over the power lines as well. Power line communication is designed to overcome interference through the design of its signal structure. For example, the Intellon power line chip set uses OFDM (orthogonal frequency division multiplexing) modulation to send multiple frequencies in the band 4 to 20 MHz. Many times some of the discrete frequencies will be blocked by interference from hair dryers and other appliance motors. But typically many of the frequencies will not be blocked, resulting in adequate transfer of data. If, however, interference on the power lines is blocking communications, the RFID readers 200 can operate as a self-healing network by switching to RF communications. In any scenario in which the system has been installed for normal operation, the RFID readers 200 can compensate for excessive noise on the power lines by maintaining RF communications with each other in place of power line communications, see Fig. 2, col. 35, lines 44-67, col. 36, lines 1-18 and 34-43. Therefore, an artisan would substitute the power line transmissions of the RFID reader can compensate interference/noise on the power line of **Stlip** for the wireless transmissions of between the RFID reader and controller/server of **Bandy et al** for significant installation cost advantage is obtained by allowing the RFID readers to "piggyback" on the standard AC power lines already in the building and without RF noise/interference.

Regarding claim 60, all the claimed subject matters are discussed between **Bandy et al** and **Stlip** in respect to claims 30 and 57 above.

Regarding claim 62, all the claimed subject matters are discussed between **Bandy et al** and **Stlip** in respect to claims 32 and 60 above.

7. Claims 31, 34, 61 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** and **Stlip** and further in view of **Pulkkinen et al**.
Regarding claim 31, all the claimed subject matters are discussed between **Bandy et al** and **Pulkkinen et al** and **Stlip** in respect to claims 24 and 30 above.

Regarding claim 34, all the claimed subject matters are discussed between **Bandy et al**, **Pulkkinen et al** and **Stlip** in respect to claims 32 and 33 above.

Regarding claim 61, all the claimed subject matters are discussed between **Bandy et al**, **Pulkkinen et al** and **Stlip** in respect to claims 31 and 60 above.

Regarding claim 64, all the claimed subject matters are discussed between **Bandy et al**, **Pulkkinen et al** and **Stlip** in respect to claims 34 and 63 above.

8. Claims 37 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** in view of **Li et al** [7,136,832]
Regarding claim 37, **Bandy et al** fails to disclose the common database defines a global database. However, **Bandy et al** teaches that the wireless communication network 170 and data communication network 175 provide the centralized processor or

server 1490 includes database and a processor 1490 performs processing to identify any potentials interactions with other drugs registered by a user, see Fig. 14, col. 23, lines 1-20. **Li et al** suggests that a real time tracking items includes RFID tags, RFID readers, data center 108 and site server 204. The data center 108 includes a database layer 206 for storage of information received at the visibility layer through a global visibility network. The global visibility network is provided which allows for the collection and distribution of real-time accurate location and status data on the movement of goods and assets through a supply chain. Reusable, shared conveyances (such as pallets, containers, cartons, totes, trailers, etc.) may be used to transport the goods through the supply chain. These conveyances are enabled with automatic data collection technologies that provide an accurate description of their contents as well as allow the network to track their progress and status. The system permits the tracking of items, which are stored inside conveyances, even in many levels of conveyances. In fact, the number of possible levels of conveyances is unlimited, see Figs. 1 and 10, col. 3, lines 45-58, col. 4, lines 63-67 and col. 5, lines 9-19. Therefore, an artisan would substitute the global database layer of **Li et al** for the database of centralized processor of **Bandy et al** since the centralized processor database received information data over the wireless and data communication networks, which are well known to use globally at the medical and hospital environment.

Regarding claim 66, all the claimed subject matters are discussed between **Bandy et al** and **Stlip** in respect to claims 32 and 65 above.

9. Claims 74-77, 80-83, 85-97, 100,101, 109, 110, 112-124, 127-133, 141 and 143-149 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** in view of **Chuprun et al** [US 6,591,084].

Regarding claim 74, **Bandy et al** fails to disclose the transmitting ID data, location data from a RF tag using hybrid spread-spectrum modulation. However, **Bandy et al** teaches that the RFID sensor tag 102 or 210 transmitting of ID, geographic location and biological, chemical, temperature and/or motion data to the readers 140 through wireless RF communications, see Figs. 1, 2, 8 and 10-16, col. 1, lines 20-30, col. 2, lines 3-19, col. 5, lines 6-10, col. 6, lines 9-41 and col. 8, lines 41-53. **Chuprun et al** suggests that a system is provided in which high data rate, low delay wireless data communication is provided to pluralities of users 105. Each plurality of users is served from a single, central wireless access unit (WAU) 201. The WAU 201 provides centralized wireless access for a plurality of users to satellite data communications services, which may be wireless or wired. For example, industrial campus applications of the invention include: wireless LANs, shop assembly and parts coordination, paging services, inventory control and RF tag services, telecommuting services, and remote sensor applications for electric, oil, gas, water, and other similar utilities. Commercial and retail campus services provided by the invention include: billing services, real time inventory control, real time shopping services, advertisement applications, real time delivery tracking, audiovisual customer service, reservation services, staff management and tracking, and security applications. Mobile applications of the invention include:

vehicle tracking, real time location information, real time map delivery, and high speed passenger internet access. The use of a WITS WAU 201 in accordance with the invention addresses this limitation by allowing users to access data from satellites via the WITS WAU 201, which is located in a position for tracking and communicating with the satellites. In addition to the adaptive exploitation of spectral "holes", it may also be desirable to employ the spectrum scanning and analysis in a tagging mode. In this manner, signals within the band of interest may be identified and tagged such as military, cellular, satcom, broadcast, global positioning system (GPS), and pager. Data of interest may also include TDOA estimates and network identification tags. The hybrid spread spectrum modulation is used via hybrid SS module 316. In this preferred embodiment, hybrid modulation includes both frequency hop (FH) and direct sequence (DS) methods in order to minimize WITS service impact on existing wireless services, while simultaneously reducing the interference impact of these existing services on the WITS-delivered data. FH/DS hybrid spectrum 300, including typical interference sources, such as fading 302, pilot tone interference 304, noise interference 306, and bauded co-channel interference 308. Each hop frequency fn is spread over a corresponding channel consisting of bandwidth WsN, for a total spreading bandwidth of Wt. Although four hopping bands are shown in the FIG. 9, the actual number of hopping frequencies will vary depending upon the environment and spectrum availability. When operating near or below the ambient noise floor, spreading the hop impulse in this manner results in a spectral distribution that minimizes the WITS interference impact on existing wireless services, while allowing for the application of interference suppression

algorithms at data utilization device 205. Since spreading serves to improve interference immunity, reduced hop bandwidths may be implemented to lower hop rates, which are less than the current state-of-the-art. These lower hop rates and bandwidths will enable simplified transceiver implementations. Note that when the DS processing gain is low, the FH/DS hybrid will approach the pure FH system. Hence, in one embodiment, the invention further includes the ability to adjust the hop bandwidths and spreading sequences depending on the contiguous spectrum availability and existing service density and sensitivity requirements. Furthermore, since DSPN is applied primarily for the purposes of impulse concealment and interference rejection functionality, power control issues are less problematic. Hence, a small number of spreading sequences may be used primarily to prevent the damaging effects of hop collisions between sub-nets (e.g., adjacent WITS cells), see Figs. 1 and 9, col. 2, lines 41-65, col. 16-29 and 66-67, col. 5, lines 1-17, col. 7, lines 7-56 and col. 8, lines 36-58. Therefore, an artisan would substitute the wireless hybrid spread-spectrum modulation of **Chuprun et al** for the wireless RFID sensor tag communications of **Bandy et al** since the hybrid spread-spectrum serves to improve interference immunity, reduced hop bandwidths may be implemented to lower hop rates, which are less than the current state-of-the-art. These lower hop rates and bandwidths will enable simplified transceiver implementations.

Regarding claims 75-78, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 2-4 and 74 above.

Regarding claims 80-83, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 6-9 and 74 above.

Regarding claims 85-97, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 11-23 and 74 above.

Regarding claims 100 and 101, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 2, 26 and 27 and 74 above.

Regarding claim 109, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 35 and 100 above.

Regarding claim 110, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 2, 36 and 109 above.

Regarding claims 112-124, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 2, 2, 3, 7, 16, 22, 23, 38, 39, 43-46, 90,96, 97 and 109 above.

Regarding claims 127-133, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 53-58, 114 and 114 above.

Regarding claim 141, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 35 and 133 above.

Regarding claims 143-149, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** in respect to claims 38, 67, 68-73, 141 and 114 above.

10. Claims 79 and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** and **Chuprun et al** and further in view of **Bradin**.

Regarding claim 79, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Bradin** in respect to claims 5 and 78 above.

Regarding claim 84, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Bradin** in respect to claims 10 and 83 above.

11. Claims 98, 99, 102, 103, 125, 126, 134, 135 and 139 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** and **Chuprun et al** and further in view of **Pulkkinen et al**.

Regarding claims 98 and 99, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Pulkkinen et al** in respect to claims 24, 25 and 92 above.

Regarding claims 102 and 103, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Pulkkinen et al** in respect to claims 28, 29 and 100 above.

Regarding claims 125 and 126, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Pulkkinen et al** in respect to claims 98, 99 and 120 above.

Regarding claims 134 and 135, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Pulkkinen et al** in respect to claims 28, 29 and 133 above.

Regarding claim 139, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Pulkkinen et al** in respect to claims 33 and 133 above.

12. Claims 104, 106, 136 and 138 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** and **Chuprun et al** and further in view of **Stlip**. Regarding claims 104 and 106, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Stlip** in respect to claims 30 and 32 and 100 above.

Regarding claims 136 and 138, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Stlip** in respect to claims 30 and 32 and 133 above.

13. Claims 105, 108, 137 and 140 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** and **Chuprun et al** and **Pulkkinen et al** and further in view of **Stlip**.

Regarding claims 105 and 108, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Stlip** and **Pulkkinen et al** in respect to claims 31 and 34 and 104 above.

Regarding claims 137 and 140 all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Stlip** and **Pulkkinen et al** in respect to claims 31 and 34 and 136 above.

14. Claims 111 and 142 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bandy et al** and **Chuprun et al** and further in view of **Li et al.**

Regarding claim 111, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Li et al** in respect to claims 37 and 109 above.

Regarding claim 142, all the claimed subject matters are discussed between **Bandy et al** and **Chuprun et al** and **Li et al** in respect to claims 66 and 141 above.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shannon et al discloses the container comprises a device tag, such as an RFID (Radio Frequency IDentification) tag associated with GPS (Geographic Positioning System) information. The checkpoints comprise readers, such as RFID readers to detect and communicate with RFID tags. The checkpoints further comprise site managers to send information gathered by the readers to the control center. A communication channel between the site managers and the control center comprises, for example, a secure network connection enabled by satellite or other wireless communication devices. Another embodiment comprises a plurality of control centers that handoff monitoring tasks, each site manager communicating with at least one of the control centers. [US 7,129,837]

Walker discloses an RFID tag technology is an example of a technology that would be enhanced by a PFN interface. PFN/TRAC System increases RFID technology track and deliver more real time data to many IP systems for monitoring and management of material movement both for commercial purposes and security reasons. [US 6,965,816]

16. Any inquiry concerning this communication or earlier communications from examiner should be directed to primary examiner **Van Trieu** whose telephone number

is (571) 272-2972. The examiner can normally be reached on Mon-Fri from 7:00 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mr. Daniel Wu** can be reached on (571) 272-2964.

Van Trieu
Primary Examiner
Date: 3/12/07